
Nuclear Regionalism in Russia: Decentralization and Control in the Nuclear Complex

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One of the dangerous casualties of Russia's democratic and market transition has been the weakening of centralized control over the country's nuclear complex.¹ Amid the rubble of the Soviet collapse emerged a fragmented and penetrated state characterized by confused responsibilities for nuclear weapons, materials, technologies, and facilities dispersed across Russia. Preying on this weakness, a *mélange* of independent-minded bureaucrats, enterprise managers, organized criminal networks, and other "insiders" have managed on occasion to wrangle licit and illicit access to weapons-usable nuclear materials and technologies.² Accordingly, the presumption of a benign but "dysfunctional" Russian state that is either unaware or unable to control the dealings of public, quasi-public, and private actors typically lies at the heart of international concerns about the proliferation, safety, and accountability of the country's nuclear inheritance. As summed up by a highly respected review of U.S. nonproliferation assistance to Russia, the vulnerability of WMD material to theft and transfer to terrorists or rogue states prompted by the loosening of Moscow's grip constitutes the "most urgent unmet national security threat to the United States today."³

Often overlooked in this assessment of the breakdown of authority in the Russian nuclear sector is the impact of regionalism. The issues and plethora of analysis tied to fiscal federalism, new forms of local governance, and oscillations in center-periphery relations in Russia, for the most part, have not seeped into discussion or practical thinking about the stability and control of the nuclear sector. While analysts have identified the conditions that confront specific nuclear institutes and touched on civil-military ties at the local level, there has been a dearth of systematic inquiry into how and to what effect regional political offices "matter" for managing Russia's nuclear complex.⁴ Western assistance providers tend to gloss over sub-federal levels in policy reviews of specific programs, and to attribute subversion of program objectives either to bureaucratic opportunism, the entrepreneurial skill of specific nuclear facility directors, or to poaching by criminal conspirators.⁵ Given the national security issues at stake, the legacy of monolithic control of the Soviet nuclear sector, and the enduring hierarchical structure of the residual Russian nuclear complex, nuclear regionalism in Russia strikes many as unexpected. Accordingly, regional interference is typically dismissed as an *ad hoc*

phenomenon, suggestive of the limitations of the Russian state in performing basic functions, including maintenance of stable command and control of nuclear materials and facilities.

Nevertheless, neglect of regionalism and its blanket association with “loss of control” is both outdated and problematic for understanding the link between decentralization and the risk of nuclear anarchy in Russia. As this article will demonstrate, there is considerable evidence of regular and multifaceted intrusion by oblast- and local-level political elements into the formulation and implementation of Russia’s nuclear policies and related cooperative assistance programs. Since the Soviet collapse, this involvement has ranged from threats issued by regional politicians to commandeer strategic nuclear forces; to attempts at flaunting centrally imposed nuclear safety and reform measures for purposes of rent seeking, economic relief, or regional politics; to the formation of regional-industrial lobbies at the federal level forged around mutual interests in expanding nuclear power generation. Moreover, this subversion of national policy by regional and local interests has persisted in the face of Russian President Vladimir Putin’s concerted campaign to strengthen the vertical chain of command across Russia. On the other hand, the effects of nuclear regionalism have not been uniformly disruptive, and in some instances have bolstered transparency and oversight of Russia’s nuclear complex. Regional involvement at times has abetted implementation of cooperative assistance programs, removing political and economic barriers at both the federal and local levels. In short, regionalism in Russia appears to be both more prevalent and less damaging to the integrity and stability of the nuclear complex than is commonly assumed. How do we explain this mixed record?

Applying a political “principal-agent” analysis, this article highlights the incentives encouraging regional autonomy and attendant managerial challenges posed by the separation of centralized power and control over Russia’s nuclear complex. This approach illuminates a variety of dimensions to oblast- and local-level influence on nuclear policymaking in Russia, with different consequences for administrative control and nonproliferation concerns. It demonstrates that weak and vulnerable regional leadership can create conditions ripe for official and unofficial elements to exploit the nuclear sector. Alternatively, strong sub-federal administrative bodies enjoy considerable leeway to subvert federal policies at the local level, while constraining the opportunism of federal agencies and expediting cooperative nonproliferation

assistance programs involving Western countries. Consequently, this analysis gives pause to the pervasive pessimism regarding the link between decentralized power and lack of control of Russia’s nuclear complex, as well as to recent optimism that Putin’s recentralization reforms will insulate Russia’s nuclear policies from the rough and tumble of regional politics.⁶

This article draws on the empirical and analytical findings of a major study of nuclear regionalism in Russia conducted by American and Russian specialists.⁷ Data was gathered from extensive field research on the regional political and economic dynamics surrounding various nuclear enterprises and closed cities; detailed study of the strategies, structures, and responsibilities of the Russian Ministry of Defense and the Russian Ministry of Atomic Energy (Minatom); and interviews with U.S. officials charged with conducting cooperative assistance programs. As used in this article, “nuclear regionalism” refers to the autonomy of sub-federal political actors to formulate and implement Russia’s nuclear policies.⁸ Accordingly, it is a relative concept that only at an extreme encompasses the issue of separatism. To be clear, however, research to date has not uncovered evidence of nuclear separatism, nor is that the focus of the analysis below.

The article proceeds first with a review of the shifting sands of regionalism in Russia, underscoring the scope of post-Soviet center-periphery relations and the limits to Putin’s attempt at restoring federal control over policymaking. The second section recounts the uncertainties surrounding the ability of Russian policymaking to manage the nuclear complex. This analysis examines the hierarchical structure of the Russian nuclear complex and persistent gaps in the distribution of power and responsibility for oversight. The third section outlines how sub-federal politicians exploit the strategic situations in which they have been placed, specifying the dimensions of regional intrusion into Russian nuclear policymaking. The article then assesses the various implications that “regionalism” has for controlling and stabilizing Russia’s nuclear sector. The conclusion offers practical guidelines for refining U.S. cooperative nonproliferation assistance in light of these findings.

PRAGMATIC REGIONALISM IN RUSSIA

During the first five years of the post-Soviet transition, the governing capacity of the Russian Federation was threatened by fragmentation. The intensity of centrifugal and centripetal pressures shifted in concert with the struggle for political control between the executive and

legislative branches of the federal government. Russian federalism was tantamount to a multi-level political game in which the 89 administrative components of Russia (consisting of 21 ethnically defined republics and 68 territorially defined regions) vied with each other for preferential treatment and subsidies from the center, while rival branches of the federal government sought to outbid each other to garner support from the provinces.⁹ During times of intense constitutional and political crisis at the center, regional leaders succeeded in wresting greater autonomy to decide policies. Alternatively, during periods of consolidated executive control, regional offices remained relatively in tow with the federal government.

Following the outbreak of the first war in Chechnya (1994-1996) and in the run-up to the 1996 presidential election, center-periphery tensions entered a second phase. In an effort to shore up his regional flank, Russian President Boris Yeltsin agreed to broaden the tax and fiscal authorities of the governors at the expense of local and federal legislative bodies. To arrest a potential separatist contagion among some republics and the movement toward sovereign status (but not full independence) by several other rebellious ethnic republics (and later oblasts), Yeltsin signed a series of asymmetrical bilateral treaties that conferred variable regional rights over natural resources and foreign trade. Yeltsin also moved to placate local sensitivities by relinquishing presidential authority to appoint regional leaders, which allowed the latter to stand for election. After the March 1997 gubernatorial elections were completed, regional leaders were institutionally liberated from the Russian president for incumbency and poised to champion local interests in the political and economic transformation under way in Russia. The crux of regionalization turned on issues of "power sharing" and competition for policymaking autonomy.¹⁰ The result was incessant, ad hoc deal making between Moscow and the regions. By the end of 1999, this process had the cumulative effect of obfuscating jurisdiction at all levels of government and virtually stripping the center of the capacity to enforce federal authority.¹¹

Almost immediately upon assuming office in 2000, President Putin launched a concerted campaign to take back federal power from the regions and restore the "vertical dimension" of control. Buoyed by popular support for a second crackdown on Chechnya in 1999, while saddled with the legacy of ambitious power grabs and conflicting de facto regional policies, the Putin team introduced a series of reforms to recentralize control of the

Russian government. The new leadership focused attention first on "correcting" egregious contradictions between regional and federal laws and practices, as well as on increasing the center's control over the international interactions of the regions. The government then passed a series of laws and decrees that fundamentally reorganized the institutional relationship between the center and the provinces. The most conspicuous reforms included creating seven new federal districts, each headed by a presidential envoy; stripping regional leaders of ex officio membership to the upper chamber of Parliament, the Federation Council; and introducing new norms for impeaching regional authorities acting in violation of the constitution.¹² Subsequently added to this hard-nosed posture were political gambits explicitly aimed to induce deference from some of the country's most independent-minded governors. To date, Putin has forged ahead with these policies in the name of bolstering the efficiency and uniformity of federal field operations, creating an integrated political and economic space across Russia, strengthening central monitoring of local practices, and adding greater coherence to the country's diplomacy.

While the reforms are ongoing, preliminary evidence suggests that Putin has succeeded in restricting the scope of center-periphery relations, imposing new rules of the game that favor the federal government. This newfound authority is manifest primarily in strengthened capacities to rein in maverick governors and selectively induce local compliance with federal priorities. Yet Putin's reforms have not bolstered Moscow's capacity to root out or punish regional opportunism. Ironically, the very success of this recentralization campaign has accentuated problems with the "weakness" of the Russian government—problems that lie at the crux of the lingering challenge of regionalism. Because political power and policymaking in Russia still turn on personalities and arbitrary practices, as opposed to transparent institutions and procedures, Putin's regional reforms have perpetuated administrative confusion and further blurred lines of federal and regional authority. Consequently, they may potentially decrease the efficiency of the state by leaving open windows for regions to obstruct federal policies and for regional lobbies to combine with interest groups at the center to shape national policymaking.¹³ These trends are evident in the nuclear sector: The arbitrary nature of federal authority has reinforced the autonomy of central ministries and exacerbated incentive incompatibilities between federal and regional actors. These factors continue to complicate oversight of nuclear policymaking.

LIMITS TO HIERARCHY WITHIN THE RUSSIAN NUCLEAR COMPLEX

Following the disintegration of the Soviet system, political power and responsibility for Russia's nuclear complex remained at the federal level. Formal administrative responsibility for managing nuclear weapons, materials, technologies, and facilities—earlier concentrated in the Communist Party's Central Committee, the Ministry of Defense, and the Ministry of Medium Machine Building—was divided primarily among the successor Ministry of Defense and Minatom, which report directly to the president and prime minister, respectively.¹⁴ The Twelfth Main Directorate of the Ministry of Defense was delegated comprehensive authority over the nuclear weapons arsenal, warhead storage, and the related nuclear testing and transportation infrastructure.¹⁵ Beginning in 1992, control over the bulk of Russia's nuclear program came under the purview of Minatom. Minatom now directs the entire chain of production for nuclear weapons and coordinates Russia's overall policies toward research, development, testing, conversion, scientific and technical cooperation, export control, and waste management in the nuclear sector. Minatom also conducts oversight of fissile material, related production and disposition facilities, and Russia's 10 nuclear closed cities and guides the operation of Russia's fuel cycle and commercial use of nuclear energy. In addition, Minatom was ceded joint authority with the Nuclear and Radiation Safety Oversight Agency (GAN) to supervise licensing, regulation, and safety in both the defense and commercial sectors. The two ministries also officially share responsibility with the Russian Federal Security Service (FSB) for controlling access to respective nuclear facilities.¹⁶

In a marked break with Soviet practice, in which the state was the sole proprietor of the entire nuclear sector, the Minatom complex is characterized by variable ownership and managerial profiles. Ownership of Russia's nuclear facilities, bifurcated by presidential decree in 1993, consists of state unitary facilities and research centers on the one hand, and quasi-private entities on the other. Facilities designated in the former category are exclusively government owned. In the case of the latter, which comprises open joint stock and limited liability companies, the government is obligated only to retain at least a 49 percent share and membership on the corporate governing board for a specified period. This reorganization complicates management of the industry, as nearly 50 percent of the enterprises have been partially privatized and are increasingly preoccupied with commercial survivability

at the expense of strictly upholding national considerations.¹⁷

In addition to dividing ownership within the nuclear sector, Russian law ambiguously devolved decision making and oversight responsibilities to regional and municipal governments. Reversing a 1993 presidential edict that stipulated exclusive federal jurisdiction over the nuclear complex, President Yeltsin signed a new law in 1995 that delegated both "joint" and "independent" responsibilities to regional administrations.¹⁸ In particular, regional executive leaders could now share powers with federal agencies to establish the location of defense-related nuclear facilities on their territories, conduct state environmental impact studies of nuclear facilities, provide for the safety and protection of citizens affected by the use of nuclear power, remedy the consequences of nuclear accidents, train specialists in the operation of nuclear facilities and use of radioactive substances, and implement environmental safety programs in the nuclear sphere. The governors also were ceded broad authority to supervise the use of radioactive material; implement safety measures at nuclear power plants and storage facilities; develop regional programs for using nuclear energy; determine the location of nuclear installations, storage facilities, and waste facilities; establish physical protection controls and accounting measures for radioactive materials; and resolve other unspecified problems related to the use of nuclear energy and materials. Moreover, Article 12 of the law empowered relevant municipal bodies to decide issues bearing on the location and construction of nuclear facilities, as well as to generate local environmental impact studies, inform the public of prevailing radiation levels, and adopt measures to protect citizens and their property in the case of a nuclear accident. In effect, the law granted regional and local politicians considerable but ambiguous jurisdiction over formulating and implementing federal nuclear policies.

Bureaucratic Opportunism

Adding to the confusion, institutional uncertainties confounded longstanding informal mechanisms for managing federal nuclear agencies. Previously, the Soviet leadership maintained formal control through the nuclear sector's priority status at the highest political level, strict and intrusive oversight by the Communist Party and security police, preferential budgetary allocations, and the personal accountability of nuclear institute and enterprise directors. These controls were replaced in the "new Russia" by a combination of benign neglect among the

national leadership, budgetary austerity, and a push to make industry search for new ways to maintain economic viability. Ambiguities associated with “joint jurisdiction” among federal agencies complicated oversight and provided occasion for bureaucratic entrepreneurship. Amid the administrative disorder, for example, Minatom seized opportunities to advance an ambitious strategy for increasing nuclear power generation at the expense of rival government agencies. This commercially oriented approach included a plan for consolidating the ministry’s control over profit-generating civilian nuclear research and defense-related nuclear production.¹⁹ The absence of clearly delineated regulatory responsibility also paved the way for Minatom to redefine its jurisdiction. By appealing directly to legislative allies, the ministry succeeded in usurping full licensing authority over defense-related nuclear production and in eviscerating GAN’s supervisory role in the civilian sector which, in turn, relaxed safety standards to accommodate the ministry’s narrow financial and technological means.²⁰ Similarly, overlapping mandates between the Ministry of Defense, Minatom, and the FSB complicated access to otherwise “open” nuclear facilities in the defense and commercial sectors. This arrangement exacerbates managerial difficulties by adding multiple layers of bureaucracy for issuing clearances to nuclear facilities and closed cities that are governed by different sets of interests and criteria for “preserving secrecy.”²¹

Grasping at Straws?

At the same time, the deinstitutionalized policymaking landscape has complicated vertical control within the Minatom apparatus. On the one hand, the Soviet legacy of hierarchy in the nuclear industry was passed on to Minatom. In particular, the ministry inherited several direct and indirect instruments for coercing and inducing compliance from nuclear facilities across Russia. Formal control mechanisms include delegating the authority to supervise sales of nuclear material from the national stockpile, certifying nuclear operators, setting standards for monitoring and enforcing quality control at nuclear facilities, providing technical approval for nuclear exports, monitoring internal compliance with national export control laws, and approving the (de)classification of nuclear information and travel clearances for top-level managers in the nuclear complex.²² In addition, Minatom has the authority to supervise the management and corporate governance practices of both state-owned and open joint stock companies in the nuclear sector, as well

as to adjust priorities, coordination, and allocations of federal financing and foreign assistance for the nuclear industry. In usurping power to request or deny privileges for subordinate nuclear facilities, the ministry has capitalized on the residual corporate culture of centralization that pervades the nuclear complex, its own strong representation within interdepartmental government commissions, and regular access to senior echelons of the executive branch.²³

Yet, the confusion associated with Russia’s transition has had a deleterious effect on Minatom’s hierarchical control. The precipitous drop in state defense orders and protracted federal budgetary shortfalls during the first decade of transition called into question the effectiveness of Minatom’s financial mechanisms. Throughout the decade, the ministry faced regular difficulties covering operating expenses and salaries in the plutonium complex, and, at times, received less than 50 percent of the annual federal outlays necessary to support defense activities. Even as federal financing for the sector began to pick up in 2000, Minatom’s fiscal control had clearly slipped, as salary payments remained delayed and unadjusted for inflation, and unpaid leaves, reduced work schedules, downsized production, and difficult social conditions remained the norm. Accordingly, institute directors acquired strong incentives and de facto discretion to look beyond traditional vertical channels for extra-budgetary relief.²⁴ Minatom’s overzealous plan for reducing by half both the number of nuclear weapons design-and-production facilities and the overall size of the nuclear workforce by 2005 has reinforced the impetus for regional autonomy.²⁵ At the same time, political infighting within the ministry has compromised its capacity to guide responses to the social and economic crisis afflicting the nuclear complex. Conflicts over funding priorities for civilian power generation, defense production, and reorganization and control of profit-making activities in the nuclear industry have sent mixed signals throughout the bureaucracy. For instance, attempts by former Minister of Atomic Energy Yevgeniy Adamov to enlist regional support in his campaign to commercialize the civilian branch of the industry and compete for a 40-45 percent market share in the domestic energy sector emboldened local authorities to subordinate the ministry’s defense conversion agenda to parochial entrepreneurial interests.²⁶ This combination of budgetary shortfalls and conflicting signals has created conditions conducive for regional leaders, environmental groups, and enterprise directors to behave more opportunistically than in the past. As a result,

Minatom's control over the nuclear complex has varied across Russia's regions.

DIMENSIONS OF NUCLEAR REGIONALISM

The administrative confusion at the federal level in Russia suggests that the hierarchical relationships, both between President Putin and Minatom and between the executive leadership and nuclear facilities within the Minatom structure, are marred by gaps between principals and agents. In this case, the principals—the president and the leadership of Minatom—enjoy formal and informal authority to control and oversee the activities of respective subordinated offices. At the executive level, the Russian president is interested in promoting the nuclear sector for the country's international prestige and development, while maintaining checks and balances over the sector to ensure stable control and consistency among national security and industrial policies. At the bureaucratic level, the leadership of Minatom generally seeks to redress the inherited problems confronting the sector and to increase the ministry's political autonomy and commercial stature, both at home and abroad. Such parochial interests include consolidating and converting nuclear assets in the defense sector, as well as expanding nuclear power generation, technology exports, and earnings from the storage and reprocessing of foreign spent nuclear fuel.²⁷ Alternatively, the agents—Minatom within the federal bureaucracy and respective nuclear facilities across Russia—are formally obligated to comply with directives for carrying out nuclear operations in return for financial and political remuneration. The rub, however, is that the agents enjoy advantages of information and expertise that are critical for conducting complex technical policies in the geographically dispersed nuclear complex. Because principals cannot perfectly and costlessly monitor the behavior and information of agents, they must expend scarce resources inducing and enforcing compliance—in other words, incur agency costs. Thus, the challenge confronting both the Russian president and the leadership of Minatom is how to mitigate these asymmetries to render agents accountable for their actions in a manner consistent with respective national and bureaucratic objectives.

What distinguishes this principal-agent feature of Russian nuclear politics is the extent to which power and responsibility are separated simultaneously at both the federal and regional levels, creating significant agency costs at the executive and bureaucratic levels of federal governance. While institutional ambiguity creates conditions ripe for Minatom to pursue narrow bureaucratic interests

at the expense of national strategic priorities, it simultaneously constrains the capacity of the ministry's leadership to dictate the incentives for subordinate facilities. These gaps in administrative control at the federal level and within the Minatom hierarchy create a variety of openings for regional involvement at both the front and back ends of nuclear policymaking.

The Federal Face

The creation of the Federation Council in the 1993 Russian Constitution provided regional leaders with formal but limited power to shape the country's nuclear legislation. The Federation Council contains two representatives of each of the 89 constituent regions and republics of Russia. The powers of the Federation Council include authority to approve the national budget, as well as to make proposals and amendments to federal laws pertaining to the nuclear sector. Notwithstanding Putin's reform that ended their *ex officio* membership in the council, Russia's regional executive and legislative leaders continue to wield influence in molding the legal context for Minatom's policies. While no longer having a direct vote in parliament or parliamentary immunity from federal prosecution, regional leaders gained rights to send and recall full-time, professional representatives to the Federation Council. Regional leaders now have the discretion to determine the nature of control over representatives and to instruct delegates to devote substantially more time to specific pieces of federal legislation than they themselves could have in the past. In practice, the significance of the reform in terms of making inter-regional coordination more difficult and susceptible to counter-pressure from the State Duma has been partially offset by the influence of professional lobbyists who pursue pet regional issues with Minatom. This situation has created a new type of Russian official whose effectiveness depends on both establishing a constructive rapport with federal officers and upholding regional interests. According to one newly appointed representative, the incentive to compromise with Minatom is complemented by the credible threat that regional leaders can instruct representatives to selectively vote down legislation proposed by the executive branch. Consequently, regional interests are taken seriously by government officials at the early stages of drafting and negotiating federal proposals in order to avert a public showdown.²⁸

In addition, regional governors can use their position to lobby executive branch officials directly. In April 2001, for example, Governor Eduard Rossel of Sverdlovsk Oblast

petitioned Prime Minister Kasyanov to restructure the federal tax debt of a nuclear facility located within the region's closed nuclear city, Novouralsk. In this case, the Urals Electrochemical Plant, which is responsible for blending down weapons-grade uranium into low-enriched uranium as part of the "Megatons to Megawatts" agreement, failed to meet tax obligations from 1994-1999, primarily because the Ministry of Defense did not pay for state defense orders. The problem was compounded by Minatom's hoarding of 200 million rubles in foreign assistance otherwise earmarked for municipal and facility coffers.²⁹

Fiscal "ZATOism"

Another avenue for sub-federal intervention is related to public financing of Russia's nuclear enterprises. On the one hand, oblast governments have been marginalized in fiscal transactions pertaining to the nuclear complex. By law, the federal government has exclusive authority to "budget" revenues for the "closed administrative territorial formations" (ZATO) or "closed cities," including the ten nuclear ZATO, or closed nuclear cities.³⁰ These revenues are raised through federal tax transfers (profit, personal income, property, and value-added) and grants that are supplemented by the independent "non-tax" income of the ZATO. Unlike typical Russian cities, the nuclear ZATO do not interact directly with regional governments on public finance issues, except those regarding collections of road and environmental funds. In some cases, such as Chelyabinsk Oblast (home to four closed cities, three of which are nuclear: Ozersk, Snezhinsk, and Trekhgornyy), fiscal separation is magnified by the fact that federal remittances for the closed cities approximate the entire oblast budget.³¹ This dependency on federal transfers and grants noticeably increased immediately following the dramatic devaluation of the ruble in 1998.³²

That said, it is possible for regional leaders to provide critical supplementary and non-budgetary allocations for the nuclear ZATO. In 1997, for example, the governor of Nizhny Novgorod took great interest in promoting transformation at Russia's largest federal nuclear weapons design center in Sarov, creating an oblast-level conversion fund to guide commercial and personnel incentives at the institute.³³ More significantly, regional authorities weighed in decisively to influence the perpetuation of federal tax shelters in the ZATO from 1997 to 1999. They also played a major role in the subsequent elimination of these privileges.³⁴ In particular, the governor of Sverdlovsk spearheaded the campaign to pass legislation in Moscow to permit the creation of tax-free zones in the ZATO and

to allow the closed cities to retain other taxes collected on their territory. This campaign occurred at a time when federal subsidies remained unreliable. It aimed largely to promote defense conversion and to diversify the region's commercial profile. Alternatively, executive and legislative officials in Chelyabinsk pressured the federal government to rescind the law establishing the ZATO tax privileges. According to the governor, the ZATO tax shelters created perverse incentives for tax evasion and significantly reduced the tax base across the region. In an effort to compensate the ZATO for lost revenues associated with the disbanding of off-shore zones, the governor and regional parliament created a special extra-budgetary fund to reimburse the outlying territories for improvements in the transportation infrastructure used by the ZATO.³⁵ Furthermore, oblast governments have stepped into the breach by taking it upon themselves to restructure the local debts of Minatom facilities. The Sverdlovsk administration, for example, concluded a separate agreement with Minatom to revise the repayment schedules to local contractors for the construction of the Beloyarsk nuclear power station and a cancer center in the capital city, Ekaterinburg.³⁶

Municipal authorities play an even greater role in keeping the ZATO financially afloat. Unlike regional governments, city officials retain authority to levy independent taxes, including small education and licensing fees and occasional "wildcat" taxes to generate short-term revenue to support local infrastructure.³⁷ In some cities, such as Trekhgornyy, the mayor assumed the lead in marketing the city's nuclear conversion projects and updating the local infrastructure to attract commercial investment. His success contributed directly to Trekhgornyy's distinction in 2001 as the only nuclear closed city to become self-sufficient without help from the federal budget or foreign assistance. By the end of the year, the city tripled its federal tax payments and became the model for ZATO prosperity.³⁸ At the same time, local officials have been authorized to designate line-item expenditures for housing and "other" infrastructure construction within the ZATO budgets. The consequent fiscal imbalance between federal revenue-generating authority and municipal discretion over expenditures perpetuates financial shortfalls for the ZATO.³⁹

On the defense side of the ledger, municipal authorities provide critical financial relief—via the "sponsorship" of military units—that circumvents federal channels. The city of Orenburg, for example, extended supplementary credits and assumed the burdens of financing the support-

ing social infrastructure for the strategic missile unit deployed on its territory. In other cities, such as Kozelsk in Kaluga Oblast, municipal authorities subsidized social and educational expenses for a strategic missile division in exchange for employment opportunities for local civilian constituents.⁴⁰ The limits of nuclear “sponsorship” were extended in the case of the Rabachiy submarine base located in Vilyuchinsk, Kamchatka. In an effort to redress funding shortfalls, a group of nine cities—Vilyuchinsk, Petropavlovsk, Irkutsk, Krasnoyarsk, Chelyabinsk, Omsk, Tomsk, Podolsk, and Zelenograd—provided clothing, food, travel, and other benefits for specific Oscar II-class SSGN crews. In October 2000, the municipal sponsors convened to coordinate their efforts and discuss potential conditions for continuing their assistance. Under the terms of the final agreement, sponsoring authorities obtained rights to recommend personnel for service and to ensure that local constituents would serve on recipient submarines, thus preempting formal military recruitment and assignment processes. Representatives of the Omsk administration attempted to take the issue further, stipulating that sponsored submarines procure locally manufactured equipment. In practice, the sponsorship agreement tied solvency of the nuclear submarine base to the vicissitudes of respective regional budgets.⁴¹

Local Motion

A third category of sub-federal involvement in nuclear politics derives from the impact that regional leaders have on the daily operations of military units and nuclear facilities. The most conspicuous attempts to influence nuclear facilities occurred when sub-federal officials endeavored to commandeer nuclear weapons deployed on the territory under their jurisdiction. In March 2000, the Volgograd regional assembly nearly passed legislation that would have extended regional control over Russia’s largest missile testing range. This maneuver followed a dramatic incident in 1998 in which Alexander Lebed, the governor of Krasnoyarsk Krai, sent a letter to the Russian federal government castigating Moscow for the poor conditions faced by local strategic missile units and alluded to the governor’s interest in placing the division under his regional jurisdiction. While the legislation proposed in Volgograd failed by one vote, and Lebed’s threat was issued mainly to pry additional funding from federal coffers and as a political gambit to boost his own presidential pretensions, both incidents reveal the extent to which local politics intrude upon nuclear policymaking.⁴²

Less dramatic, but more intimate forms of influence turn on efforts to co-opt military assets to further regional economic development. In September 2001, for example, the governor of Saratov Oblast succeeded in pressuring the Russian Air Force to permit the dual use of the Engels Air Force Base, which is home to a strategic bomber division. By gaining the right to use the base for commercial flights, the governor both improved the local infrastructure and acquired a *de facto* voice in base operations.⁴³ Similarly, several regional authorities have reclaimed deactivated nuclear weapons bases and insisted that eliminated silo sites undergo strict environmental remediation before being turned over to the private sector. On occasion, these efforts have garnered support from local civic and environmental groups, which together have strengthened the voice of regional interests in military policymaking.⁴⁴

Another low-cost avenue for regional intrusion into nuclear policymaking rests with control over the local infrastructure. Shortfalls and delays in federal subsidies, combined with imbalances between local and federal fiscal responsibilities, have rendered military installations and Minatom facilities dependent on regional discretion for access to energy, transportation, public health, military housing, and other local benefits and services. Regional officials have seized on this predicament to settle local debts and to collect tribute from vulnerable nuclear facilities.

Similarly, regional officials share power with various federal agencies to monitor and enforce safe operations at nuclear facilities via oversight of local emergency response teams, law enforcement, export control, and customs offices. Some regions, for example, have created security councils to expedite coordination among federal, oblast, and local branches of law enforcement and nuclear regulatory officials. Others, such as Chelyabinsk and Sverdlovsk Oblasts, have assumed direct responsibility for providing supplemental financial and technical support to local internal security troops, as well as housing and social benefits for military personnel, in an effort to upgrade safety and security at local nuclear facilities.⁴⁵ Moreover, regional assemblies and municipal courts offer venues for local interest groups and environmental lobbies to petition Minatom’s policies, as well as for local military commanders and nuclear institute directors to seek legal remedies for shortfalls in federal obligations. The power to approve oblast or local referenda and to excite popular debate over nuclear and environmental

issues also affords regional leaders with conspicuous, de facto influence over the implementation of federal nuclear policies.

STRATEGIC IMPLICATIONS

What are the consequences of gaps in hierarchical control of the Russian nuclear complex? Does regional intrusion into the policymaking process help or hinder nuclear safety and security in Russia? Does it advance or confound Minatom's parochial bureaucratic interests and the success of cooperative assistance programs?

Answers to these questions lie in the dynamic burdens of responsibility in principal-agent relationships. First, both principals and agents can manipulate asymmetries of information and incentives in the relationship. Because agents know more about the details of the work assigned to them, they can tailor responses to principals in keeping with their own interests. The ability to do so, however, depends on the extent to which agents possess stable interests and resources that are not directly subordinate to a principal.⁴⁶ However, principals too can take advantage of information asymmetries. They can set goals for agents that are excessively difficult to achieve. They also can hide behind information asymmetries to off-load blame for policy failures onto agents who bear primary responsibility for implementing specific policies and are directly accountable to affected local constituencies. Moreover, principals can exploit vulnerabilities and differences among contending agents to further their own policy ends.⁴⁷ Second, policymaking autonomy can simultaneously increase agency costs in one relationship, while decreasing them in another. An agent can manipulate information asymmetries to shirk responsibility vis-à-vis a direct principal, while taking action that effectively bolsters the oversight of another principal. Agency opportunism in one relationship, therefore, can provide independent, third-party "fire alarms" for another principal. Because third parties are affected by the shirking of an agent in another relationship, they have independent incentives to observe and influence the behavior of that agent, thus reducing the respective direct costs of oversight in that relationship.⁴⁸

In the context of Russian nuclear regionalism, the policy consequences of these principal-agent relationships depend not only on the stability and consolidation of regional interests, but also on the level (federal or regional) on which they are asserted. Regional leaders who have

consolidated political authority and possess clear policy interests are in a good position to subvert or complicate the implementation of Minatom's policies within their regions. This situation can either improve or mar the effectiveness of nuclear stability and cooperative assistance, depending on the specific interests and resources wielded by respective regional authorities. At the federal level, however, the activism of entrenched regional leaders can curtail Minatom's bureaucratic opportunism and contribute to greater transparency and oversight of the national policymaking process. Acting with independent interests and authority, regional assertiveness here can sound fire alarms about ministerial shirking. Alternatively, an embattled or vulnerable regional leadership is more apt to be exploited by Minatom to advance favored policies in the region or to contribute to a general loss of control over nuclear assets in the affected territory. Similarly, regional weakness at the federal level loosens parliamentary checks and balances on Minatom's federal activities. Figure 1 depicts the alternative consequences for stability of the nuclear complex and effectiveness of cooperative assistance produced by the interplay of political activism by different types of regional leaders at the federal and regional levels.

Strong Regions (Soft Subversion)

The two left-hand cells in Figure 1 reveal that regionalism can affect Russian nuclear policymaking, at both the regional and federal levels, in cases where sub-federal authorities enjoy independent political and economic bases of local power. The upper left-hand box reflects those scenarios where regional leaders can purposefully undermine or expedite implementation of federal nuclear policies, depending on their particular policy concerns and resource endowments. On the one hand, they can practice "soft subversion," exploiting control over the local infrastructure to extract side payments from Minatom or to co-opt the use of specific facilities, with adverse consequences for nuclear safety.⁴⁹ This tactic was demonstrated by the independent-minded governors of Ivanovo and Primorskiy Kray, who took it upon themselves to unplug strategic military units (including an early-warning radar in the case of the latter) from the local energy grid in an effort to unlock delivery of federal subsidies. City officials in Votkinsk took the issue further by both sponsoring a referendum to build a solid rocket fuel incineration plant on their territory, and preventing access to the federal facility, once built, until the city was

fully compensated for the loss of real estate incurred as a result. While the referendum was subsequently invalidated by the regional supreme court, the president of the territory concerned, Udmurtiya, continued to block construction of the plant until Moscow agreed to provide additional state defense orders in the republic.⁵⁰

Similar bargaining tactics have obstructed commercial nuclear activities as well. For example, on several occasions in 2001, the local energy provider in Chelyabinsk, Chelyabenergo, significantly reduced the power supply to major defense-related nuclear facilities in Chelyabinsk, including the warhead assembly/disassembly facility in Trekhgornyy, the nuclear warhead design center in Snezhinsk, and the Mayak storage facility in Ozersk.⁵¹ The governor of the same province, emboldened by an upturn in the region's economic outlook in 2001, exaggerated the risks of an accidental overflow of radioactive waste along the Techa River drainage basin in order to pressure Minatom to resume construction of a nuclear power plant in Ozersk. The governor evinced little regard for local environmental concerns, proposing instead that the polluted water be used to cool the plant.⁵² Moreover, the popular governor of the Khabarovsk region repeatedly confounded Minatom by taking a strong stand against the

construction of nuclear power plants on his territory. He also encouraged a local shipyard to sell or lease an Akula II-class nuclear attack submarine to India. Neither dependent on Minatom for energy supplies nor beholden to the Ministry of Defense for dismantlement assistance, the Khabarovsk governor has consistently charted an independent course to maximize local economic gains on nuclear issues in his region.⁵³

Regional "soft subversion" also characterized the politics surrounding the construction of a Japanese-financed floating liquid radioactive waste (LRW) treatment plant in Primorskiy Kray. The plant was needed to process contaminated coolants resulting from the dismantlement of nuclear attack submarines in the region. Confronting a critical situation with leaky LRW tankers in the region, the kray administration threatened in 1994 to usurp federal jurisdiction by authorizing LRW dumping in the Sea of Japan unless Moscow accepted the Japanese offer for support. This move precipitated a protracted dispute between the kray and federal governments over the technical specifications of the storage facility, criteria for awarding tenders, distribution of financing, and environmental risks. This dispute effectively imposed bottlenecks and raised the expense of the treatment plant. The politi-

FIGURE 1
REGIONAL STRENGTH AND THE DOMINIONS OF INFLUENCE ON NUCLEAR STABILITY IN RUSSIA

		Strength of Regional Leadership	
		Strong/Independent	Weak/Vulnerable
Dominion of Influence	Regional	<ul style="list-style-type: none"> • Soft Subversion • Constructive Engagement 	<ul style="list-style-type: none"> • Loss of Control • Criminal Penetration
	Federal	<ul style="list-style-type: none"> • Third-Party Oversight 	<ul style="list-style-type: none"> • Pro-Minatom

cal battle escalated in mid-1996 with the intervention of municipal authorities from Bolshoi Kamen, who unilaterally banned construction of the floating plant, citing environmental safety concerns and distrust of federal motives. Subsequently excluded as a contracting agent in Minatom's revised plan, the kray administration reversed course and even came out against the project. Regional resistance intensified through the summer of 1997, capped by a city referendum that postponed the delivery of the LRW plant. Finally, in 2000, the new LRW facility was delivered to the Zvezda Shipyard in Bolshoi Kamen. This development occurred, however, only after evidence of leakage from one of the shore-based LRW tanks caused local residents and officials to drop initial protests and Minatom agreed to delegate oversight responsibility to the municipal administration. Notwithstanding the fulfillment of Japan's funding obligation in November 2001, local politicians continue to run on platforms against the project that raise questions about the future of the facility, and by extension, the safety and pace of submarine dismantlement in the Russian Far East.⁵⁴

On other occasions, strong regional leaders have intervened to expedite implementation of conversion and cooperative assistance at local nuclear facilities. Tomsk officials, for example, who have tied the region's welfare to development of the hydrocarbon sector, have assumed an active role in promoting diversification of the large Siberian Chemical Combine located in the closed nuclear city of Seversk. The governor reached a modus vivendi with local nuclear directors, whereby his office promised to cultivate favorable socio-economic conditions for the combine and to lobby on behalf of Minatom's strategy for increasing nuclear power generation. In return, the local nuclear industry committed to remedying short-term energy deficits and contributing to the economic resurgence of the region. The governor also championed the Tomsk Regional Initiative, which entails direct cooperation with U.S. government agencies to attract foreign investment to the region.⁵⁵ Other regional leaders have exploited their autonomy and resources to facilitate local conversion initiatives. Leaders in Sverdlovsk, for example, held Minatom accountable for meeting international safety standards in constructing a new warhead storage facility in the closed city of Lesnoy.⁵⁶ Furthermore, U.S. officials have noted that on numerous occasions regional and local administrators, eager to woo foreign assistance and to demonstrate autonomy from Moscow, have taken the initiative to relieve local bottlenecks and "bend the

rules" to expedite specific projects funded by the Cooperative Threat Reduction (CTR) program.⁵⁷

Regional Fire Alarms

The lower left cell of Figure 1 captures the influence of strong regional leaders at the federal level. Such regional leaders can use their parliamentary authority to constrain Minatom's bureaucratic entrepreneurship consistent with their own interests. This tactic holds mixed consequences for the stability of Russia's nuclear industry and the prospects for cooperative assistance. On issues in which regional interests conflict with national security objectives and Minatom's commercial interests, regional interventions can subvert cooperative nonproliferation assistance. In 2000, for example, regional leaders exercised authority in the Federation Council to express reservations about the U.S.-Russian "Megatons to Megawatts" deal, drafting a resolution that revised the agreement and jeopardized a major funding source for the ministry.⁵⁸

Conversely, independent regional leaders have capitalized on their federal powers to improve the effectiveness of national nuclear policies. The maverick former governor of Primorskiy Krai, Yevgeniy Nazdratenko, collaborated with officials in Bolshoi Kamen and representatives of the Zvezda Shipyard to lobby Moscow in support of the CTR submarine dismantlement program.⁵⁹ Similarly, the governor and Duma representatives of Chelyabinsk appealed directly to President Yeltsin and the Federation Council in 1999 to pressure Minatom to fulfill financial obligations to the three closed nuclear cities in the region. In 2001, the Chelyabinsk governor again used his clout in Moscow to draw attention to the fiscal laxity exhibited by Minatom and the Ministry of Defense and to negotiate the rescheduling of the 1994-1999 federal tax debt for the Urals Electrochemical Plant.⁶⁰

The political battle over Minatom's proposed legislative amendments permitting Russia to store and reprocess foreign spent nuclear fuel illustrates the role of regional offices in promoting accountability and transparency at the federal level. Initially, Minatom seized upon the prospects for earning \$20 billion over ten years in this potential global market by proposing amendments to the 1992 federal environmental protection law that prohibited the import of radioactive waste.⁶¹ Under the original proposal, Minatom was designated exclusive oversight both to conclude specific contracts and to allocate revenues for the development of the nuclear industry and environmental remediation. This proposal met strong

resistance inside Russia, with regional leaders across the country threatening to vote down the legislation in the Federation Council and polls suggesting that more than 90 percent of the population did not support the amendments. In an effort to avert a public showdown, Minatom conspicuously offered policy inducements to regions that stood to be directly affected by the program. In particular, Minatom revised the proposal by explicitly committing to distribute 70 percent of the profits via direct outlays and taxes to fund related regional nuclear infrastructure and environmental remediation. This concession, combined with Minatom's extensive lobbying campaigns to trumpet the regional commercial benefits of the program, succeeded in co-opting support from several critical regions, such as Chelyabinsk and Krasnoyarsk. The final consideration of the proposal in the Federation Council thus became a conspicuous "non-event," as the upper chamber passed the legislation directly to the president for approval without conducting an extensive review.⁶² Moreover, as a concession to regional and popular agitation over the legislative amendments, President Putin personally intervened to create an interagency oversight body, headed by a Nobel laureate, with executive authority to review specific contracts and supervise the allocation of revenues for environmental cleanup. The consequent costs of policy success for Minatom were significant, as the ministry was formally obligated to share profits and to allow greater transparency in crafting and administering specific deals involving the import of spent nuclear fuel. The increased transparency, in particular, strengthened the legal grounds for regional authorities and local environmental lobbies to sound the alarm in the future regarding any questionable activities by Minatom in this field, which will increase the chances of holding the ministry publicly accountable for Russia's foreign spent fuel transactions.⁶³

Weak Regions (Weak Control)

As depicted by the right-hand cells of Figure 1, politically divided and economically strapped regional leaderships also impact Russian nuclear policymaking. Here, however, the influence is primarily by omission, as weak governing capacities foster local conditions ripe for corruption and graft to penetrate nuclear activities. The regional consequences are depicted in the upper right-hand cell. These problems have been especially conspicuous in Russia's Far Eastern Federal District, given the relative economic hardships and prominence of criminal networks on the one hand, and the high concentration of nuclear materials on

the other.⁶⁴ The situation in Kamchatka clearly illustrates this thesis, as nuclear issues have been at the center of several hotly contested regional political races, and the region's economic woes have given rise to systematic criminal activities involving theft and diversion of nuclear materials. Different political leaders—including the State Duma representative, members of the Kamchatka Oblast Duma, and the Communist Party governor—have staked out contending positions regarding the safety and utility of increasing the region's reliance on nuclear power. While the governor has tended to side with Minatom's attempts to increase the profile of nuclear power in the region, his political rival in the State Duma has stymied progress on other fronts. The latter, in particular, has stoked public apprehension by condemning U.S. assistance for submarine defueling and dismantlement in the region and protesting the import of spent nuclear fuel. Amidst the political turmoil, Minatom, which assumed formal responsibility for defueling nuclear submarines in 1998, has adopted secretive practices and fallen behind in financial support for managing the cleanup of radioactive waste in the region, allowing local politicians to bear the brunt of public criticism.⁶⁵

At the same time, the criminal situation in Kamchatka has become so serious that a local naval commander equated smuggling of military-related materials to an actual "regional conflict," given the possible adverse effects on military readiness. In January 2000, for example, two sailors bribed their way onto the Rybachiy Naval Base and succeeded in removing radioactive calibrating plates from a decommissioned nuclear submarine. A subsequent February 2001 trial of eleven indicted sailors also revealed that platinum catalysts had been systematically stolen from most of the decommissioned nuclear submarines at the base.⁶⁶ Moreover, it has been reported that local mafia organs typically disseminate to naval recruits flyers listing black market prices and instructions for stealing precious metals from the Rybachiy base.⁶⁷

Minatom's Discretion

Similarly, as reflected in the lower right-hand cell, weak and nuclear energy dependent regions have been enlisted to support Minatom's campaigns to take on other federal bureaucracies. While many regional and local governments have acquired authority to regulate polluters in their territories, business pressures, corruption, and close ties to Minatom do not augur well for most of them taking definitive stands in support of independent regulatory authority or championing local environmental

concerns.⁶⁸ Moreover, leaders from some of Russia's most troubled regions have tended to endorse Minatom's long-term strategy for increasing nuclear power generation, notwithstanding local suspicions about the ministry's managerial practices and protests by grassroots environmental groups. For example, a group of nuclear energy dependent regional leaders formed the Union of Territories and Enterprises of the Nuclear Energy Complex specifically for lobbying the federal government to expand construction of nuclear power stations and to endorse Minatom's efforts to import spent nuclear fuel.⁶⁹ Governor Roman Abramovich of Chukotka Oblast, for example, has used his position to weigh in on these political debates. Abramovich, who is one of Russia's leading financial oligarchs, applied his political and commercial muscle to lobby on behalf of strengthening Minatom's financial control over federal conversion credits. In Moscow, Abramovich also actively promoted former Minister of Atomic Energy Adamov's campaigns to expand nuclear power generation and to contract with other states for reprocessing and indefinitely storing spent nuclear fuel in Russia.⁷⁰

CONCLUSION AND RECOMMENDATIONS

The above analysis demonstrates not only that regional political actors do indeed matter in the formulation and implementation of Russia's nuclear policies, but that both the direction and scope of their influence vary systematically across regions and levels of policymaking. In brief, different types of regions exercise different forms of influence at the federal and regional levels, with different consequences for nuclear stability and nonproliferation. Those regions that possess available resources and strong leadership can significantly impede or expedite local implementation of federal nuclear policies, depending on respective instrumental concerns. Similarly, they can serve as important "fire alarms" to shore up monitoring of federal offices and ministries, thus improving national control over the nuclear sector. Conversely, weak and economically strapped regions tend to exacerbate problems of "nuclear opportunism," contributing to the general "loss of control" over the nuclear complex. These regions are especially susceptible to corruption and criminal practices that increase risks of theft, diversion, and proliferation of fissile material from local facilities. Politicians from weak and dependent regions also tend not to exercise respective federal authority with the aim of checking or challenging the bureaucratic strategies championed by Minatom or the Ministry of Defense.

The effects of regional intrusion on specific issues related to nuclear stability and cooperative assistance also are mixed. On the one hand, a central finding of the research reported in this article is that regional activism is correlated neither with democratic oversight nor improved safety concerns in the nuclear sector. Strong and autonomous regional leaders typically weigh in on nuclear issues to further parochial economic or political objectives, with little regard for environmental safety or stability of the complex. Local public opinion and grassroots environmental movements tend to be ignored, unless regional politicians can co-opt respective issues for political or commercial profit. Similarly, regions that have experienced the fewest problems in nuclear control have tended to be those where Minatom has been stronger and where specific nuclear facilities have remained relatively insulated from intra-regional politics and the local economy. On the other hand, independent-minded regional leaders have tended to promote conversion and downsizing of the nuclear complex. Motivated primarily by material interest, strong regional leaderships have prodded both Minatom and local facilities to expedite commercial transformation and have served as creative allies in bolstering the effectiveness of cooperative assistance. These twin pressures suggest that regionalism by itself does not offer a panacea for averting the difficult commercial, security, and environmental trade-offs attendant to reform of Russia's civilian and military nuclear complex.

What do these conclusions mean for the West and how might they influence the future of cooperative nonproliferation assistance to Russia? First, they demonstrate the limits of issue linkage as a diplomatic tactic for inducing or pressuring compliance with nonproliferation norms. The separation of power and accountability in the nuclear complex creates alternative incentives among poorly coordinated federal- and regional-level political actors. As a result, rewarding or punishing a federal agency for the behavior of a region that as a practical matter is not under its control does not work. Rather, Western partners should target assistance directly to specific regional authorities and firms, ensuring that Russian recipients shoulder both the costs and benefits of cooperation. Accordingly, assistance providers should build on the spirit of the Nuclear Cities Initiative by working with Russian federal and regional authorities to fund projects directly related to retraining personnel and transforming the local nuclear infrastructure.⁷¹

Second, Western assistance providers should understand the specific political, economic, environmental, and

social dynamics in targeted regions and develop an appreciation for the relative strength and instrumental interests of respective regional leaders. Strong and independent-minded sub-federal-level officials should be included (together with federal officials and facility leaders) in negotiations and given discrete responsibilities for supervising specific projects. Excluding such regional concerns, inadvertently or otherwise, risks unnecessary project delays and costs overruns. In addition, neglect of regional actors by Western assistance providers can lead to missing opportunities to enlist important allies in removing local obstacles and containing bureaucratic opportunism at the federal level. Many regions of Russia would also benefit from a focus on nonproliferation technical assistance, information, and education to improve the responsiveness of local politicians to citizens' concerns about nuclear safety and security. Alternatively, in weak and dependent regions, Western partners should work closely with Minatom and other federal offices to redress priority concerns related to the physical protection and security of designated facilities. Specific concerns in these territories should be impressed upon Russian central authorities, and the relevant assistance should be directed at strengthening federal oversight and national export controls.

Finally, in light of the challenges posed by the decentralization of administrative control and the multifaceted role of regional leaders, Western providers should jettison narrow accounting standards for measuring the success or failure of cooperative nonproliferation assistance programs. As discussed above, even the most efficiently designed programs can be subverted from either above or below in Russia, despite the best intentions of program administrators and final recipients or strategic imperatives. Moreover, because these assistance programs generate intangible benefits—such as broadening political support among autonomous policymaking circles across Russia and shoring up gaps in coordination and transparency in the nuclear sector—their significance cannot be adequately captured on an accountant's balance sheet. By appreciating that cooperative assistance programs serve as more than vehicles for dismantling the former Soviet arsenal, and by understanding how they can play critical roles in facilitating the institutionalization of effective oversight of the Russian nuclear complex, we can fully assess the effectiveness of specific programs. Failure to do so not only risks alienating potential allies in Russia, but could unnecessarily increase the likelihood that the decentralization

under way in Russia will degrade control of the nuclear complex.

¹ The author wishes to thank the members (listed below) of the two-year project on "Nuclear Regionalism in Russia" that was initiated by the Center for Nonproliferation Studies (CNS) and conducted in cooperation with the Center for Policy Studies in Russia (PIR) for sharing their research findings.

² William C. Potter and Elena Sokova, "Illicit Nuclear Trafficking in the NIS: What's New? What's True?" *The Nonproliferation Review* (Summer 2002), pp. 1-9; and Rennselaer Lee, *Smuggling Armageddon: The Nuclear Blackmarket in the Former Soviet Union and Europe* (New York: St. Martin's Press, 1998).

³ Howard Baker and Lloyd Cutler, co-chairs, U.S. Secretary of Energy Advisory Board Report, "A Report Card on the Department of Energy's Nonproliferation Programs with Russia," January 10, 2000, <http://www.hr.doe.gov/seab>. For a succinct analysis of how the weakness of the Russian state adversely affects the implementation of nonproliferation export controls, see Elina Kirichenko and William C. Potter, "Nuclear Export Controls in Russia: The Players and Process," in Gary K. Bertsch and William C. Potter, eds., *Dangerous Weapons, Desperate States* (New York: Routledge, 1999), pp. 27-45.

⁴ Susan L. Clarke and David R. Graham, "How Near to Collapse is Russia Itself?" *Orbis* 39 (Summer 1995), pp. 329-351; Dale R. Herspring, "The Russian Military Faces 'Creeping Disintegration'," *Demokratizatsiya* 7:4 (1999), pp. 573-586, <www.demokratizatsiya.org/html/vol7.html>; Eva Buzsa, "From Decline to Disintegration: The Russian Military Meets the Millennium," *Demokratizatsiya* 7:4 (1999), pp. 561-572, <www.demokratizatsiya.org/html/vol7.html>; Valentin Tikhonov, *Russia's Nuclear and Missile Complex: The Human Factor in Proliferation* (Washington, DC: Carnegie Endowment for International Peace, 2001); Oleg Bukharin, "The Future of Russia's Plutonium Cities," *International Security* 21 (Spring 1997), pp. 126-158. For earlier accounts of the interface between local politics and nuclear issues in the Russian Far East, see James Clay Moltz, "Russian Nuclear Regionalism: Emerging Local Influence over Far Eastern Facilities," in Judith Thornton and Charles E. Zeigler, eds., *Russia's Far East: A Region at Risk* (Seattle: University of Washington Press, 2002), pp. 247-266; and Cristina Chuen and Tamara Troyakova, "The Complex Politics of Foreign Assistance: Building the Landysh in the Russian Far East," *The Nonproliferation Review* 8 (Summer 2001), pp. 134-149.

⁵ *Limited Progress in Improving Nuclear Material Security in Russia and the Newly Independent States*, U.S. General Accounting Office, GAO/RCED/NSIAD-00-82, March 2000; *DOE's Efforts to Assist Weapons Scientists in Russia's Nuclear Cities Face Challenges*, U.S. General Accounting Office, GAO-01-429, May 2001. See also discussion in Scott Parrish and Tamara Robinson, "Efforts to Strengthen Export Controls and Combat Illicit Trafficking and Brain Drain," *Nonproliferation Review* 7 (Spring 2000), pp. 112-124.

⁶ For distinctly pessimistic accounts, see especially Stephan Blank, "Russia as Rogue Proliferator," *Orbis* 44:1 (Winter 2000), pp. 91-107; and Ariel Cohen, "The Centralization of Russian Rule and its regional Military industrial Complexes: The Challenges of Strategic Weapons Proliferation," chapter presented at the "Workshop on Reassessing US-Russian Strategies Against Strategic Weapons Proliferation," sponsored by the Nonproliferation Policy Education Center, unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002. For cautious optimism, see especially Siegfried S. Hecker, "Thoughts About an Integrated Strategy for Nuclear Cooperation with Russia," *Nonproliferation Review* 8 (Summer 2001), pp. 1-24.

⁷ The project conducted case studies of regions with high concentrations of nuclear facilities in the Urals, Far Eastern, Volga, and Siberian Federal Districts. Members of the project included Sonia Ben Ouagrham, Cristina Chuen, James Clay Moltz, Michael Jasinski, Nikolai Sokov, and Elena Sokova (Center for Nonproliferation Studies); Dmitri Kovchegin and Vladimir Orlov (Center for Policy Analysis-PIR Center), as well as Gregory Brock, Igor Khripunov, Ivan Safranchuk, and Sharon Weiner.

⁸ "Regionalism" as defined here includes the influence of sub-federal political authorities at the republic, okrug, kray, oblast, and city levels.

⁹ See especially summary in Gail W. Lapidus and Edward W. Walker, "National-

ism, Regionalism, and Federalism: Center-Periphery relations in Post-Communist Russia," in Gail W. Lapidus, ed., *The New Russia: Troubled Transformation* (Boulder: Westview Press, 1995), pp. 79-114.

¹⁰ In contrast to the Soviet experience, disintegration is bounded by a constellation of centripetal forces linked to Russia's overwhelming ethnic homogeneity, the institutional legacy of Soviet paternalism, inter- and intra-regional differences in political and economic profiles, personal rivalries between and among federal and local politicians, and Moscow's lingering authorities to control the national purse to reel in egregious violations of federal norms.

¹¹ See especially discussion in Kathryn Stoner-Weiss, "Central Weakness and Provincial Autonomy: Observations on the Devolution Process in Russia," *Post-Soviet Affairs* 15 (1999), pp. 87-106; and Gary N. Nelson, "Matryoshka Federalism" and the Case of Khanty Manisysk Autonomous Okrug," *Post-Soviet Affairs* 17 (2001), pp. 167-194.

¹² For a summary of Putin's federal reforms, see especially Matthew Hyde, "Putin's Federal Reforms and their Implications for Presidential Power in Russia," *Europe-Asia Studies* 53:5 (2001), pp. 719-743.

¹³ Ibid.; Eugene Huskey, "Political Leadership and the Center-Periphery Struggle: Putin's Administrative Reforms," in Archie Brown and Lilia Shevtsova, eds., *Gorbachev, Yeltsin, and Putin: Political Leadership in Russia's Transition* (Washington, DC: Carnegie Endowment for International Peace, 2001); and Robert Ortung and Peter Reddaway, "The Russia Initiative: Russian State-Building: The Regional Dimension," in *Russia Initiative: Reports of the Four Task Forces* (New York: Carnegie Corporation of New York, 2001), < <http://www.carnegie.org> > .

¹⁴ As of February 2001, Minatom has reported directly to the Prime Minister. In addition, the Russian Shipbuilding Agency acquired formal authority to supervise nuclear weapons material in naval shipyards in 1999.

¹⁵ Control over nuclear weapons storage facilities was initially divided between the 12th Main Directorate and the 6th Main Directorate within each military service. In 2001, it was announced that all nuclear weapons under the jurisdiction of the Ministry of Defense will be consolidated under the control of the 12th Main Directorate by 2003.

¹⁶ Thomas B. Cochran, Robert S. Norris, and Oleg A. Bukharin, *Making the Russian Bomb: From Stalin to Yeltsin* (Boulder: Westview Press, 1995), p. 32; and Igor Khripunov, "MINATOM: Time for Crucial Decisions," *Problems of Post-Communism* 48 (July/August 2001), pp. 49-58.

¹⁷ Joint stock companies must be at least 49 percent owned by the Russian government, their management and privatization plans must be approved by appropriate government agencies, and their governing boards must be staffed by representatives of the Russian government. According to Khripunov, 55 percent of the nuclear industry remained exclusively under government ownership, but the trend has favored increasing "commercialization and consolidation" of the sector. At the close of 2000, Russia's nuclear industry consisted of 171 state-owned facilities and 154 joint stock companies. See Khripunov, "MINATOM: Time for Crucial Decisions," p. 55.

¹⁸ Russian Federal Law, "On the Use of Atomic Energy," *Sobraniye zakonodatel'stva Rossiyskoy Federatsii*, No. 48, Articles 10-12, November 27, 1995. The author thanks Vladimir Orlov and Dmitri Kovchegin for identifying this law.

¹⁹ Minatom's strategy calls for: increasing power generation from 15 to 45 percent in Russia by 2030 via the construction of as many as three new reactors funded primarily from revenues gained from exports of nuclear technology and profits from long-term storage of foreign-origin spent nuclear fuel. This strategy provoked reactions from other government agencies including the Foreign Ministry, GAN, and RAO EES (the national electricity company).

²⁰ Khripunov, "MINATOM: Time for Crucial Decisions," pp. 56-57.

²¹ Mayak FMSF Technical Program Manager, U.S. Department of Defense (name withheld by request), interview by Michael Jasinski, Washington, DC, August, 2001.

²² Igor Khripunov, "MINATOM and its Mechanisms of Controlling Nuclear Facilities," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

²³ In addition to its formal position within the government, Minatom is prominently represented on three Security Council interagency commissions.

²⁴ In 1997-1998, Minatom could cover only 20 percent of the actual costs of operating the plutonium complex. Bukharin, "The Future of Russia's Plutonium

Cities," p. 132. See also discussion in Igor Khripunov and Maria Katsva, "Russia's Nuclear Industry: The Next Generation," *Bulletin of Atomic Scientists* 58:2 (March/April 2002), pp. 51-57.

²⁵ Khripunov, "MINATOM: Time for Crucial Decisions," p. 55; Oleg Bukharin, "Downsizing Russia's Nuclear Warhead Production Infrastructure," *Nonproliferation Review* 8 (Spring 2001), pp. 125-126.

²⁶ This point is made in Sonia Ben Ouagrham and Igor Khripunov, "Minatom's Regional Strategy," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

²⁷ Bukharin, "Downsizing Russia's Nuclear Warhead Production Infrastructure," pp. 116-130; Khripunov, "MINATOM: Time for Crucial Decisions," pp. 49-57.

²⁸ Member of the Russian Federation Council (name withheld by request), interview by author, Washington, DC, December 5, 2001. The issue here is that the risk of encountering a public showdown provides an indirect deterrent on executive branch policymaking. While the formal playing field favors federal government officials, the potential costs of waging a public battle over controversial legislation diminishes the practical benefits of legislative victory. Consequently, there is an incentive for executive offices to compromise on policy before submitting proposals for a final vote.

²⁹ "Gubernator Sverdlovskoy oblasti posetil predpriyatiya Novouralska," *Biznes-Novosti Urala*, January 15, 2001, in Integrum Techno, < <http://www.integrum.ru> > ; as cited in Elena Sokova, "Nuclear Issues in the Urals Federal District," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

³⁰ As of 1998, there were reportedly 46 ZATO in Russia under the purview of the Ministry of Defense and Minatom. Developed during the Soviet period, these cities were geographically isolated, administratively separated from the surrounding region, and did not appear on maps. Secrecy surrounded the activities of the cities, and access was strictly controlled. Following the Soviet collapse, most of these cities have been officially acknowledged, many have appeared on maps, some have been open to restricted access; and a few have lost "closed city" status. Of the 46 ZATO, ten are nuclear closed cities under Minatom's jurisdiction where Russia's nuclear warhead design labs, nuclear warhead assembly/disassembly facilities, and HEU and/or plutonium production facilities are located. These cities include: Lesnoy, Novouralsk (Sverdlovsk), Ozersk, Snezhinsk, Trekhgornyy (Chelyabinsk), Sarov (Nizhniy Novgorod), Sversk (Tomsk), Zarechnyy (Penza), Zeleznogorsk, and Zheleznogorsk (Krasnoyarsk). For general demographic and nuclear profiles of these cities, see especially Richard H. Rowland, "Russia's Secret Cities," *Post-Soviet Geography and Economics* 37 (1996), pp. 426-462; Richard H. Rowland, "Secret Cities of Russia and Kazakhstan in 1998," *Post-Soviet Geography and Economics* 40 (1999), pp. 281-304; Tikhonov, *Russia's Nuclear and Missile Complex*, pp. 2-76; and Cochran, Norris, and Bukharin, *Making The Russian Bomb*, pp. 33-169.

³¹ Igor Stepanov, "Kak podelit dengi 'zapretok'?" *Delovoy Ural*, 27 April 2000, in Integrum Techno, < <http://www.integrum.ru> > ; as cited in Sokova, "Nuclear Issues in the Urals Federal district."

³² Gregory Brock, "Public Finance in the ZATO Archipelago," *Europe-Asia Studies* 50 (1998), pp. 1067-1068. Federal revenues are derived from profit and income tax, taxes on wage funds, VAT, property taxes, and federal grants. "Non-tax" income for a ZATO includes revenues from the sale of government property, revenues from administrative services, local fines. Federal subsidies to the ZATO precipitously dropped during the August 1998 devaluation crisis. At the same time, non-tax revenues increased relative to federal outlays, and regional administration stepped in to provide temporary relief via revenues generated by road funds. This comes from data analyzed in Gregory Brock, "Public Finance in the Closed Cities of Russia," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

³³ Ivan Safranchuk, "Nuclear Regionalism In the Volga Federal Okrug: Nizhniy Novgorod Oblast and the Closed City of Sarov," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

³⁴ In 1992, the Duma approved the law *On Closed Administrative-Territorial Formations* that granted special investment zone status to the ZATO. This status

permitted a closed city administration to retain all taxes and revenues collected on its territory, and to grant tax breaks to enterprises to stimulate local investment. By 1997, this law had come under attack for creating unregulated tax havens and for depriving the federal government of significant revenue. In 1998, the Duma authorized the Ministry of Finance to review the privileges granted to the ZATO, and amended the original law by specifying criteria for business registration in the ZATO. The law was officially rescinded in 2000.

³⁵ "Vsyudu dengi, gospoda," *Ozersk.ru*, July 14, 2000, < <http://www.ozersk.ru> >; as cited in Sokova, "Nuclear Issues in the Urals Federal District."

³⁶ Sokova, "Nuclear Issues in the Urals Federal District."

³⁷ Brock, "Public Finance in the Closed Cities of Russia."

³⁸ Yuriy Sukharev, "Potok v obkhod byudzheta," *Vek Yekaterinburg*, July 31 – 7 August 7, 2001, < <http://www.vek.ru> >; as cited in Sokova, "Nuclear Issues in the Urals Federal District."

³⁹ Gregory Brock, "The ZATO Archipelago Revisited- Is the Federal Government Loosening Its Grip? A Research Note," *Europe-Asia Studies* 52 (2000), pp. 1349-1360.

⁴⁰ Sergey Karakayev, "Raketnaya krepost," *Vest*, July 11, 2001; in Integrum Techno, < <http://www.integrum.ru> >; as cited in Michael Jasinski, "The Military, the Regions, and Nuclear Weapons," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

⁴¹ See, for example, "Soglashenie o razvitií shefskikh svyazey I sotrudnichestva mezhdú gorodami Rossií, Krasnoznamennoy Operativnoy eskadroy Tikhookeanskogo flota I ee korablyami," *Vesti*, 14 October 14, 2000, in Integrum Techno, < <http://www.integrum.ru> >; as cited in Cristina Chuen, "Nuclear Regionalism in the Russian Far East," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

⁴² Dmitri Kovchegin, "Nuclear Regionalism in the Siberian Federal Okrug: Krasnoyarsk Krai and Tomsk Oblast," unpublished paper prepared for the workshop on "Russian 'Nuclear Regionalism' and Challenges for US Nonproliferation Assistance Programs," sponsored by CNS, April 5, 2002.

⁴³ Jasinski, "The Military, the Regions, and Nuclear Weapons."

⁴⁴ "Podpisan protokol o reformirovanií Aleyskoy raketnoy divizion," *Interfax*, May 23, 2001; as cited in Jasinski, "The Military, the Regions, and Nuclear Weapons."

⁴⁵ Sokova, "Nuclear Issues in the Urals Federal District."

⁴⁶ D. Roderick Kieviet and Mathew D. McCubbins, *The Logic of Delegation: Congressional Parties and the Appropriations Process* (Chicago: The University of Chicago Press, 1991); and John W. Pratt and Richard Zeckhauser, "Principals and Agents: An Overview," in D. Roderick Kieviet and Mathew D. McCubbins, eds., *Principals and Agents: The Structure of Business* (Boston: Harvard Business School Press, 2001), pp. 1-35.

⁴⁷ See especially discussion in Alexander Sokolowski, "Bankrupt Government: Intra-Executive Relations and the Politics of Budgetary Irresponsibility in El'tsin's Russia," *Europe-Asia Studies*, 53 (June 2001), pp. 547-549.

⁴⁸ Mathew D. McCubbins and Thomas Schwartz, "Congressional Oversight Overlooked: Police Patrols versus Fire Alarms," *American Journal of Political Science* 28 (February 1984), pp. 165-179.

⁴⁹ "Soft subversion" is adapted from Hyde, "Putin's Federal Reforms and their Implications for Presidential Power in Russia," p. 737.

⁵⁰ "Agentsvo voyennykh novostey, March 1, 2000; in "Russia's Udmurtiya Gives up Construction of Rocket Engine Disposal Facility," FBIS Document CEP 20020301000150; as cited in Michael Jasinski, "Regional Influences and U.S. Department of Defense CTR Project Implementation," unpublished paper, Monterey Institute of International Studies, August 2002). Over 90 percent of the participants in the Votkinsk referendum voted against implementation of the solid rocket fuel incineration project.

⁵¹ "V Chelyabinskoy oblasti energetiki otkluchili 849 potrebiteley elektroenergii," *Ural-Press-Inforn*, May 25, 2001; in Integrum Techno, < www.integrum.ru >; as cited in Sokova, "Nuclear Issues in the Urals Federal District."

⁵² Sokova, "Nuclear Issues in the Urals Federal District." See also Charles Zeigler and Henry B. Lyon, "The Politics of Nuclear Waste in Russia," *Problems of Post-Communism* 49 (July/August 2002), pp. 39-40.

⁵³ Vishal Thapar, "Russians Attach Strings to N-Submarines," *Hindustan Times*, February 6, 2002, < www.hindustantimes.com >; as cited in Chuen, "Nuclear Regionalism in the Russian Far East."

⁵⁴ Cristina Chuen and Tamara Troyakova, "The Complex Politics of Foreign

Assistance: Building the Landysh in the Russian Far East."

⁵⁵ Kovchegin, "Nuclear Regionalism in the Siberian Federal Okrug: Krasnoyarsk Krai and Tomsk Oblast." During the same period, the Tomsk Oblast Duma passed legislation to regulate Minatom's shipments of fissile material from dismantled warheads to the Siberian Chemical Combine.

⁵⁶ Stanislav Lavrov, "Kogda otkayvayut tormoza," *Oblastnaya gazeta*, March 14, 2000, in Integrum Techno, < www.integrum.ru >; as cited in Sokova, "Nuclear Issues in the Urals Federal District."

⁵⁷ Michael Jasinski, "Regional Influences and U.S. Department of Defense CTR Project Implementation."

⁵⁸ Igor Khripunov, "Minatom: Time for Crucial Decisions," p. 52.

⁵⁹ Chuen, "Nuclear Regionalism in the Russian Far East."

⁶⁰ Sokova, "Nuclear Issues in the Urals Federal District."

⁶¹ For Minatom's early proposal, see *Technical-Economic Basis for the Law of the Russian Federation: On the Proposed Amendment to Article 50 of the Law of the RSFSR, 1999*, < www.bellona.no > .

⁶² Rather than hold a formal vote on all three amendments, the Federation Council opted to debate only the measure that stipulates how proceeds from the spent fuel import business are to be used for environmental restoration in the regions. All three amendments were passed directly to Putin for signature.

⁶³ The first two deals that involved the import of spent nuclear fuel from Bulgaria and Hungary that followed the passage of the amended legislation were contested for technical violations of the law in a special Duma hearing and Russia's Constitutional Court, respectively. In the Bulgarian case, Minatom had to justify the specific financial and technical arrangements of the deal. In the second episode, the Constitutional Court invalidated the government resolution that allowed the storage of nuclear waste from the Hungarian facility. See especially Yekaterina Pichugina, "In Secret From Another World: We Are Secretly Being Made Into Nuclear Goat-Milkers," *Moskovskiy komsomolets*, October 19, 2001, in FBIS: CEP20011018000242, October 19, 2001; Svetlana Babayeva, Serge Leskov, and Svetlana Popova, "The Era of Kozloduj," *Izvestiya*, January 22, 2002, in FBIS CEP20020122000602; "Duma Deputies Make Inquiry About Illegal Import of Foreign Spent Nuclear Fuel," *Interfax*, December 3, 2001; and "Court Scraps Resolution on Storing Spent Nuclear Fuel From Hungary," *Interfax*, February 26, 2002.

⁶⁴ See especially Moltz, "Russian Nuclear Regionalism: Emerging Local Influence over Far Eastern Facilities," pp. 256-257. Primorskiy Krai, at least under former Governor Nazdratenko, is a potential outlier for this analysis. Under Nazdratenko, the region exhibited both strong/independent executive leadership and an intimate fusion of public and private corruption and criminal behavior. For a discussion of the unique features of the region, see especially Peter Kirkow, "Regional Warlordism in Russia: The Case of Primorskiy Krai," *Europe-Asia Studies* 47 (September 1995), pp. 923-947.

⁶⁵ Chuen, "Nuclear Regionalism in the Russian Far East."

⁶⁶ The sailors nearly succeeded at breaking into the reactor and raising the control rods. Moltz, "Russian Nuclear Regionalism: Emerging Local Influence over Far Eastern Facilities," pp. 256-257.

⁶⁷ Former Russian submarine commander (name withheld by request), interview by Cristina Chuen, Petropavlovsk, Kamchatka Oblast, Russia, June 14, 2000. In addition, February 2001 court proceedings against 11 sailors indicted for stealing and selling materials from the Rybachiy Naval Base revealed that platinum catalysts had been missing from most of the decommissioned nuclear submarines.

⁶⁸ Charles E. Ziegler and Henry B. Lyon, "The Politics of Nuclear Waste in Russia," *Problems of Post-Communism* 49 (July/August 2002), p. 35.

⁶⁹ Nikolai Sokov, "The Reality and Myths of Nuclear Regionalism in Russia," *Program on New Approaches to Russian Security*, Policy Memo No. 133 (2000); < www.fas.harvard.edu/~ponars/POLICY%20MEMOS/Sokov133.html > .

⁷⁰ Chuen, "Nuclear Regionalism in the Russian Far East."

⁷¹ The Nuclear Cities Initiative (NCI) was established in 1998 as an equal partnership agreement between the United States and Russia and has been administered by the U.S. Department of Energy. It was intended to "create a framework for cooperation in facilitating civilian production that will provide new jobs for workers displaced from enterprises of the nuclear complex in the 'nuclear cities' controlled by the Ministry of Atomic Energy." Programmatic objectives have been directed at re-profiling scientific activities and downsizing the nuclear weapons footprint at the designated closed cities. See *Agreement Between the Government of the United States of America and the Government of the Russian Federation on the Nuclear Cities Initiative*, September 22, 1998.